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09/852,453	05/09/2001	Christoffer S. Weinold	035P0001	5145

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Rodney F. Brown
3365 Baltimore Street
San Diego, CA 92117

EXAMINER

FLEMING, FRITZ M

ART UNIT	PAPER NUMBER
2182	3

DATE MAILED: 05/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/852,453	WEINOLD, CHRISTOFFER S. 
Examiner	Art Unit	
Fritz M Fleming	2182	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on ____.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-30 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-30 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

¹Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

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FRITZ FLEMING
PRIMARY EXAMINER
GROUP 2100

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ .

5) Notice of Informal Patent Application (PTO-152)

6) Other: _____

DETAILED ACTION***Claim Rejections - 35 USC § 102***

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1,3-8,11-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen.

Per Chen, please note the following:

Claim 1: Chen shows a mobile computing system (i.e. 20) with automatic/automated shutdown (i.e. Figure 2 flowchart steps) in situations where a "mobile office" is realized and thus requires a stable power supply (i.e. column 1, lines 11-28). A variable supply is shown by the +12V which is coming from the vehicle power supply (i.e. column 1, lines 11-28 or column 2, lines 17-37, wherein the +12V represents vehicular power which does provide a variable voltage around +12V). Mounting in a motor vehicle is seen as via use of the ACC and ignition switch of a vehicle and installation in a vehicle (column 1, lines 14-17). Hence variable voltage is supplied to the mobile computer installed in the car. A system computer is seen as the computer 20, and provides informational data queries and responses (i.e. column 1, lines 10-27 word/data processing), and provides means for creating a system shutdown command (i.e. GPIO feedback OFF signal) in response to ACC ON/OFF parameter comparison data. A system interface is seen as portions of the device 10 that are coupled to the +12V and ACC and GND per Figure 1, as such receives the variable voltage at the

+12V. A computer power supply (i.e. the filter 12 and relay 13) is positioned in series in between the interface and the computer, as a conversion to a regulated power supply is made by the filter 12, as a filter will regulate, either in an active or passive mode, the input power supply, as a filter by nature will remove undesired components in order to provide regulation to the extent claimed. Means for creating the parameter comparison data is seen as the microprocessor controller 11, wherein the actual ACC values are compared against threshold and established operating parameters (i.e. ACC ON/OFF) when the controller 11 issues the SIGN to the computer 20, with the means for interrupting the transmission of the filter regulated voltage at the relay 13, in response to the GPIO signal.

As far as claim 3 is concerned, the relay 13 can be considered as being part of the computer power supply operating in conjunction with the filter 12, such that the relay has enabling/disabling functionality via its open and closed states, allowing and disabling power transmission, respectively. The relay is under the control of 20 and 11, in combination, due to the GPIO signal from 20 to 11.

As far as claim 4 is concerned, the controller 11 generates a signal to control relay 13 in response to GPIO from system computer 20.

As far as claim 5 is concerned, please note microprocessor controller 11 which has, by definition, a system interface operating program running on it in order to judge the state of ACC by monitoring ACC and then issuing the SIGN signal.

As far as claim 6 is concerned, the communication link is seen in Figure 1 as the line connecting 11 to 13, as this is how the relay 13 is controlled by the microprocessor 11.

As far as claim 7 is concerned, the vehicle ignition meets the claimed system power switch, as when the ignition switch is ON or ACC, then it allows for the transmission of unregulated and variable power via +12V to the device 10, and when the ignition switch turns OFF, then the +12V is clearly interrupted to the extent and manner claimed.

As far as claim 8 is concerned, the comparison is carried out by the microprocessor 11, with its operating program addressed above.

As far as claim 11 is concerned, note that column 2, lines 52-68 specifically state that a resident program in 20 operates in conjunction with controller 10 in the parametric comparison data creation and evaluation and that 10 can be integrated into 20, thus allowing for anticipation of the "includes".

As far as claim 12 is concerned, note the above resident program in 20.

As far as claim 13 is concerned, note the discussion of the claims above. The system computer is 20, the interface device is 10 to the extent it interfaces to +12V and ACC and GND, the computer power supply is in series at 12 and 13, with means for creating parameter comparison data in 10 via microprocessor 11 sent to computer 20.

As far as claim 14 is concerned, note microprocessor 11 in device 10.

As far as claims 15 and 16 are concerned, parameter comparison means includes both 11 and 20 per the above.

As far as claim 17 is concerned, note the detailed analysis above, to also include, a system computer 20, a system interface device 10 to be construed to include the actual physical interface to +12V/ACC/GND, a variable vehicle power supply at +12V, a computer power supply 12/13 in series with the interface to +12V/ACC/GND with its conversion to a regulated and stable supply via filtering, with microprocessor controller 11 inside of the device 10 which creates the ACC ON/OFF parameter comparison data comparing the actual state of ACC against ON/OFF conditions, with a processor in 20 running a resident program to create a shutdown via GPIO.

As far as claim 18 is concerned, such encompasses a method anticipated via the analysis above, in that the device/apparatus limitations involve the flowchart steps of Figure 2, along with steps performed to transmit/convert/establish/assign in carrying out the operations described by Chen.

As far as claims 19-25 are concerned, these method steps are also encompassed per the analysis above, noting that an automatic computer shut off includes closing at least one running application on the computer 20, as operating systems behave poorly if the computer is turned off without shutting down open applications. Such is done as a result of the detected ACC OFF from device 10. As far as claim 21 is concerned, it is to be noted that the shutdown is initiated by the device 10, which in turn starts the computer 20 shutdown, which involves shutting down open applications, so that the computer and power supply can be safely removed as evidenced by the OFF feedback GPIO signal. For claims 22 and 23, the GPIO results in 11 turning off the relay 13, thereby terminating the power to computer 20. For claim

24, note that Chen includes an internal timer per column 3, lines 37-42 (also per step 102).

As far as claims 26-30 are concerned, the method steps are anticipated via the installation of the computer 20 in the vehicle, transmitting a variable voltage via +12V, converting and regulating per the filtering by filter 12, running applications on computer 20 (i.e. the resident program or the word/data processing), establishing the parameter by monitoring ACC to detect when such is OFF by monitoring the motor vehicle to determine actual ACC values for creating comparison data, and a closing off an application program when the feedback OFF is sent by the GPIO as a shutting down of a computer with an operating system includes at least the closing of an application program. For claims 27-30, a system shutdown command is generated internal to 20 by its resident program in response to the SIGN which indicates a shutdown is to be initiated, requiring that the resident program of 20 start the shut down via a system shutdown command. A running application is thus closed when the ACC goes OFF (i.e. falls below its threshold ON value) in response to SIGN and ultimately, the relay 13 is opened either by the GPIO or the timer, discussed above.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen in view of Palatov.

Chen shows the use of a filter, but not a DC-DC converter.

In the same field of using a +12V vehicular source (i.e. column 2, lines 29-50) to power a computer, Palatov teaches that it is old and well known in the art to use a "microbrick" power supply unit comprising a DC-DC converter, when the computer operating voltage is less than that of the +12V supplied by the vehicle (i.e. Figure 4 and DC-DC converter 37, connectors 17/35/31), with attendant benefits of less size and weight.

Therefore it would have been obvious to one having ordinary skill in the art at the time that the invention was made to modify Chen per the teachings of Palatov when it is desired to save weight and space by converting the +12V to a lower voltage via DC-DC conversions via an external power supply unit, or a "microbrick".

5. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen in view of Gray et al.

Chen lacks A/D converter for real time operating data.

Gray et al. in the same field of multiple microprocessor shutdown, teaches that it is old and well known in the art to monitor, in real time via A/D converters at the master 14 and each slave 16-22, such that each processor will properly enter its powerdown routine upon a detected ignition voltage powerdown level. For example, see the discussion of the routine of Figure 2 resulting in a power supply shutdown at step 52. Such a setup allows for an orderly shutdown, even if various failures in the A/D monitoring is encountered (i.e. columns 5 and 6).

Therefore it would have been obvious to one having ordinary skill in the art at the time that the invention was made to modify Chen per the teachings of Gray et al. in order to allow for the use of A/D conversion to detect and monitor the ignition voltage signal to accurately detect an opening of the ignition switch 26 during engine shutoff, to also include the ability to compensate for various failure modes. Per Gray et al. the teachings applied to Chen would result in monitoring via A/D converters at the device 10 and computer 20, so as per Gray et al., to allow for proper operational shutdown even in various failure modes.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Iannotti et al. teach modular vehicle computer control 36 and monitor/manager 50/56. Weinold is the published application. Ishikawa et al. teaches vehicular battery protection. Krall teaches an AC or DC input DC power supply. Townsley et al. teach the use of a vehicle power supply at Figure 12 with A/D conversion. Hung teaches AC and DC input conversion. Copeland et al., Sloan,

Kobayashi, Oka et al., Kephart, Wagner, and Suzuki et al. teach automatic shutdown. Drinkwater, Kawakami, Marrington et al., Coppola, Robinson et al., Langer et al., Bilir, Hayashi et al, and Chi teach low power shutdown. Zenda teaches low battery minimum luminance shifting. Ishikawa teaches multiple input to a DC/DC converter for personal computer 18. Gladstein et al. teach power shutdown. PCM-4335 and P50 teach modular PC/104 based computer running WINDOWS™ and APM with a power management function with an optional PM104 for shut down of running programs (i.e. PCM-P50 pages 18+). APM Specification teaches operating system parameters for computer power management. 2000-172385, 2000-172384, 10-290526, 2000-233697 and 2000-228829 teach computer shutdown. Opus Solutions teaches an automotive ATX/ITX DC-DC power supply.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fritz M Fleming whose telephone number is 703-308-1483. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on 703-308-1483. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Fritz M. Fleming
Primary Examiner
Art Unit 2182

fmf